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ABSTRACT

This document provides information on the Data on Vocational Education (DOVE) plan, which has provided the National Center for Education Statistics (NCES) with a framework on which a viable data collection and dissemination program is being constructed for vocational education. A section on the status of DOVE discusses the attainment of the principal goal of designing a method for deriving vocational education information from the NCES data sets and viewing vocational education in the context of all education. Recent and anticipated accomplishments are described. Descriptions follow of NCES data sets with vocational information. Appendix A is a "by-acronym-and-name" overview of NCES data sets with vocational education information. Each data set is identified as capturing data in either the secondary or postsecondary arena. Appendix B provides a more detailed description of the NCES data sets or supplements to the data sets with vocational statistics. Appendix C frames the NCES data effort by categories of educational information (e.g., institutions, enrollment, teachers). Appendixes D and E are linked together to describe the publications, current and projected, that have been generated from the NCES data sets. Appendix D contains a cross-reference for current NCES publications only keyed to the data sets; appendix E is the publications list. (YLB)

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# Vocational Education
# Statistical Data
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**National Center For Education Statistics**
**February, 1989**
**Prepared by Mark Schwartz**

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# VOCATIONAL EDUCATION STATISTICAL DATA PLANS AND PROGRAMS

## INTRODUCTION

The Carl D. Perkins Act of 1984 continued, but revised, a Congressional mandate for the National Center For Education Statistics (NCES) to gather and report national vocational education data.

NCES responded to this task with the DATA ON VOCATIONAL EDUCATION (DOVE) plan,[1] which came about after the Center conferred with Congressional staff, the vocational education community, State and local education agencies, associations for the handicapped and other special populations, the business community, the National Occupational Information Coordinating Committee, policy and program offices in the Education Department and other Federal agencies.

As staff of the Center proceeded to develop DOVE they reached several conclusions:

(a) NCES had vocational education data in existing data sets;

(b) NCES data collection efforts include student biographical and demographic characteristics as well as student performance and plans which could be used to compare and contrast vocational and non-vocational students;

(c) While tabulations, analyses and reports from Center data displayed some VocEd information, far less was published than could be, primarily due to lack of centralized oversight from a vocational education perspective;

(d) Planning for national and other data collections was sensitive to VocEd needs and could provide expanded frameworks for VocEd analyses;

(e) Unique VocEd data collections were costly and inefficient relative to consolidated data collections;

(f) Moreover, unique VocEd data collections were not required (because the data can be achieved in other ways) and not desirable (because vocational education data means more when they are placed in the broadest context of education in the United States).

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[1] The complete text of DOVE may be found in Attachment A.

These conclusions provided the foundation for the Center's statistical data plans in response to the Perkins Act. DOVE cited the databases - secondary and postsecondary, longitudinal and cross-sectional - that would provide VocEd student and program characteristics. Further, DOVE outlined the current and projected utility of NCES' collection and analysis plans. A key to the effort, from point (f) above, was that deriving VocEd data from overall data collections and analyses provided both the means to gather VocEd data and also the essential context for understanding the relationships of VocEd to all education and to non-vocational education. Finally, as identified in DOVE, a range of data on VocEd has been collected since the Perkins Act. However, new data plans since Perkins and DOVE will provide more coverage of VocEd.

## STATUS OF DOVE

A principal goal of DOVE - designing a method for deriving VocEd information from the Center's data sets and viewing VocEd in the context of all education - has been attained. Specific elements of DOVE that have yet to come to full fruition are related to the analysis and dissemination of information, rather than the implementation of data collection. For example, data have been and will continue to be collected on job satisfaction and the training-job relationship, but these data have not been analyzed. The lag time between the first phase of planning and implementation and the second phase of analysis and dissemination has been longer than anticipated.

Finally, projected exploratory studies on financing and surveys of facilities have been deferred although some planning studies in these areas were initiated. Financial information is not readily obtainable since most State and local education agencies do not keep expenditures by instructional program. Although States can account for Federal funds, they do not necessarily know how much of their own funding they spent for vocational education. For facilities, a problem lies with the specification of what kind of policy-relevant facilities data are desirable. Broadly speaking, until there is some discussion, identification, and consensus on what is significant to know about VocEd finances and facilities it will be difficult to undertake major data collection efforts in these areas.

The next section describes recent and anticipated accomplishments, with a description of the data sets. That is followed by a description of how NCES, researchers and other Department of Education agencies have utilized these data sets to analyze VocEd issues.

## DEFINING VocEd

The Perkins Act provides a legislative definition of vocational education:

> The term 'vocational education' means organized educational programs which are directly related to the preparation of individuals in paid or unpaid employment in such fields as agriculture, business occupations, home economics, health occupations, marketing and distributive occupations, technical and emerging occupations, modern industrial and agriculture arts, and trades and industrial occupations, or for additional preparation for a career in such fields, and in other occupations requiring other than a baccalaureate or advanced degree and vocational student organization activities as an integral part of the program; and for purposes of this paragraph, the term 'organized education program' means only (a) instruction (including career guidance and counseling) related to the occupation or occupations for which the students are in training or instruction necessary for students to benefit from such training and (b) the acquisition (including leasing), maintenance, and repair of instructional equipment, supplies, and teaching aids, but the terms do not mean the construction, acquisition, or initial equipment of buildings, or the acquisition or rental of land.

This definition is useable to identify the categories on which Congress has asked to be informed but does not account for the natural diversity of State plans and programs that use varying definitions of terms for their own management and monitoring of VocEd programs. Since public, private-non-profit, and private-for-profit institutions are involved, such differences are virtually unavoidable.

Therefore, while the NCES data sets adhere to the legislative framework and capture data in these broadly defined areas, the data sets contain institutional, student, and course information derived from other contexts as well.

## NCES DATA SETS WITH VocEd INFORMATION

Listed in Appendix A is a "by-acronym-and-name" brief overview of NCES data sets with VocEd information. Each data set is identified as capturing data in either the secondary or postsecondary arena.

Appendix B provides a more detailed description of the NCES data sets or supplements to the Center's data sets with vocational statistics. Information about availability of publications and public data tapes is in Appendix D. If publications are cited, then public tapes are available. Some highlights for each set are:

(a) High School and Beyond (cited in DOVE)

Transcript studies at the secondary and postsecondary levels are good sources of information. The longitudinal study known as "High School and Beyond" that began with cohorts of seniors and sophomores in 1980, has included two transcript studies, one in 1982 and one in 1987. Course codings, paralleling the Perkins Act categories, have allowed for analyses of VocEd course activity. Linkage of the transcripts to information collected about the student in the base year and followup data collected in subsequent years can show vocational student characteristics, experiences, and outcomes and do so in relation to academic or general track students.

(b) Administrator and Teacher Survey (cited as "Consortium surveys" in DOVE)

Although fielded in the same year as the Perkins Act, this survey contains a VocEd questionnaire dedicated to VocEd administrators and teachers describing vocational education students, services and programs. It provides an historical data base.

(c) 1987 High School Transcript Study (cited in DOVE)

Transcripts were collected from a sample of high school graduates of 1987, including a sub-sample of handicapped students. The data from the general sample have been compared with data from transcripts of the high school class of 1982 noted above. Comparisons are also being made between handicapped and non-handicapped students of the 1987 class.

(d) National Education Longitudinal Survey, 1988. (cited in DOVE)

This survey will provide information on VocEd students and teachers. It will cover the critical period between 8th and 12th grade where students' postsecondary planning (i.e., vocational and educational choices) occurs, and continue to follow the survey group into postsecondary and employment experiences. If a planned supplement is funded, Area Vocational Schools will be surveyed in the second followup of 12th grade students in 1992.

(e) National Longitudinal Survey, 1972. (cited in DOVE)

Students, administrators and counselors provided information on school and student characteristics in the Center's first longitudinal study, that began with 1972 seniors. The 1984 followup provides postsecondary transcripts, linked with the earlier verbal and quantitative data, school experience, and student characteristics.

(f) Schools and Staffing Surveys. (replaced 3 surveys cited in DOVE: see appendix A)

These surveys will provide the opportunity to view vocational and non-vocational teacher characteristics and examine teacher supply, demand and shortages in both areas. Subsequent surveys will allow analysis of trends of secondary vocational teacher characteristics.

(g) Beginning Postsecondary Students. (New since DOVE)

This projected new longitudinal survey will include a cohort of students from proprietary schools, junior colleges, and less-than-2-year institutions as well as traditional college and university beginning students. It will gather information on students and institutional characteristics and follow students over 6 years. It will allow for comparison and contrast with non-vocational 2 and 4-year students and institutions. (Note: This survey is distinguished from another survey being planned, the Baccalaureate and Beyond survey, in that Baccalaureate and Beyond provides no data about the less-than-4-year institutions and students).

(h) Integrated Postsecondary Education Data System (Cited in DOVE, but also replacement for the "HEGIS" survey cited in DOVE. See appendix A)

This survey responds directly to the Perkins Act by providing, among other critical information, enrollment and completion data in occupationally-specific programs at sub-baccalaureate institutions. The survey will have biennial followups for the occupationally specific data and can be the source for trend data in this area. The first data tapes for this survey are currently in preparation.

(i) National Postsecondary Student Aid Study (New since DOVE)

Among other student and institutional characteristics, this triennial survey will provide a view of vocational and non-vocational student patterns of educational funding, as well as student profiles. Plans are in place for an extensive analysis of students in private-for-profit institutions. This survey, like IPEDS, can be a source for trend data on vocational students.

(j) National Survey of Postsecondary Faculty (not cited in DOVE)

A survey of institutions, department chairpersons, and faculty including 2-year public and private schools. Comparative characteristics of vocational and non-vocational faculty will be available.

(k) Fast Response Survey System for National Assessment of Vocational Education (Not cited in DOVE)

This one-time data-collection was utilized by the National Assessment of Vocational Education. It provided the base data for examining the pattern of Perkins funds allocation by the states.

## CROSS-REFERENCE FOR DATA SETS AND EDUCATIONAL CATEGORIES

Appendix C frames the NCES data effort by categories of educational information (e.g., institutions, enrollment, teachers). The various data collection efforts may have some overlap in information but that can be useful for examining context and for verification.

For example, student outcomes and characteristics can be described from 4 different data sets. Nevertheless, each set provides unique facets to the aggregate description of students.

## UTILIZATION OF NCES DATA SETS FOR VocEd

Appendices D and E are linked together to describe the publications, current and projected, that have been generated from the NCES data sets. This listing is meant to be broadly representative, but it is not exhaustive.

Appendix D contains a cross-reference for current NCES publications only keyed to the data sets. Additionally, each data set has an NCES person to contact if more information about the data set is desired.

Appendix E contains the publications list in the following categories:

NCES Tabulation Reports
NCES Descriptive Reports
NCES Analytical Reports
NCES Publications Expected in 1989
A Sampling of current non-NCES Publications
A Sampling of projected non-NCES Publications

## SUMMARY

The DOVE plan has provided NCES with the framework on which a viable data collection and dissemination program is being constructed for VocEd. Of particular note is the value of the transcript studies, which have provided a summary of secondary school student participation in VocEd courses. As the foregoing pages have indicated, several new data collection activities have been initiated since the plan was prepared that will complement the data described in the original DOVE plan.

Currently, NCES is initiating a contract to analyze further some of the available VocEd data. This contract will allow NCES, in cooperation with other VocEd researchers and agencies, to examine alternative paths that can aid in building a comprehensive picture of the status of VocEd.

APPENDIX A

ACRONYM AND NAME LIST FOR NCES DATA SETS WITH USEABLE VOCATIONAL INFORMATION: CURRENT AND PROJECTED

| ELSEC | | Elementary and Secondary Education |
|---|---|---|
| 1. ATS | (current) | Administrator and Teacher Survey of High School and Beyond schools. |
| 2. HSAB | (current) | High School and Beyond |
| 3. 87:HSTS | (current) | 1987 High School Transcript Study |
| 4. NELS:88 | (projected) | National Education Longitudinal Surveys, 1988 *Second Followup, 1992 |
| 5. NLS:72 | (current) | National Longitudinal Survey, 1972 |
| 6. SASS | (current) | School and Staffing Survey *Replacement for: Public School Survey, Public School Survey and Survey of Teacher's Demand and Shortage. |

| POSTSEC | | Postsecondary |
|---|---|---|
| 1. BPS | (projected) | Beginning Postsecondary Students (1992) |
| 2. IPEDS | (current) | Integrated Postsecondary Education Data System *Replacement for: Higher Education General Information Survey (HEGIS) |
| 3. NPSAS | (current) | National Postsecondary Student Aid Study |
| 4. NSOPF | (current) | National Survey of Postsecondary Faculty |

| GENERAL | | |
|---|---|---|
| 1. FRSS | (current) | Fast Response Survey System for National Assessment of Vocational Education |

APPENDIX B. KEY CHARACTERISTICS OF DATA SETS CONTAINING USEABLE VOCATIONAL DATA: CURRENT & PROJECTED

| Data Set/ Base Yr. | Followups Completed | Followups Projected | Database Design | Data Collection Units | VocEd Related Information |
|---|---|---|---|---|---|
| ATS/ 1964 | None | None | Cross. | Principals, program heads, voc ed program heads, teachers: public & private. | Data on courses, students, curriculum, equipment, community involvement, etc. |
| HS&B/ 1980 | 1982, 84,86 | 1992 | Long. | Soph & Senior cohorts, school administrators, teachers. | Student vocational interests & activities, secondary & postsecondary. Verbal & quantitative tests. Secondary & postsecondary transcripts. |
| 87:HSTS/ 1987 | None | None | Cross. | Institutions | Secondary transcripts, 1987. Augmented transcript sample from handicapped students. |
| NELS:88/ 1988 | —— | 1990,92 94,96,98 | Long. | 1988 8th graders. Parents, teachers, administrators. Area Vocational Schools Supplement in 1992, if funded. | Eng, Math, Soc Studies, Sci test scores. VocEd students/teachers. Transcripts. Details on student attitude, experiences, background, expectation. |
| NLS:72/ 1972 | 1973,74 76,79, 84 | None | Long. | Students, administrators, counselors. | Verbal/quantitative tests. School & student characteristics. Secondary transcripts. School experiences. |
| SASS/ 1988 | —— | Teachers:'89. Others: 2–3 year cycle. | Long. Cross. | Teachers, school administrators. | Teacher demand/shortage. School, student, secondary VocEd teachers characteristics. |
| BPS/ Baseyear is NPSAS,90 | —— | 1992,94 96 | Long. | Follow–up of students noted by NPSAS as starting post–secondary in 89–90. Includes proprietary, less–than–2–year & junior colleges. | Student and school characteristics. For VocEd students – employment & educational outcomes, postsecondary transcripts. |
| IPEDS/ 1987 | —— | Biennial for occ. specific. Others: annual | Cross. | Institutions, public & private for profit & non–profit. | Enrollment in occupationally specific programs, completion data, sub–baccalaureate institutional characteristics, degrees by program. |
| NPSAS/ 1987 | —— | Triennial | Cross. | Students & Institutions | Institutional characteristics, including profit/non–profit. Student characteristics, educational funding, educational expectations. |
| NSOPF/ 1988 | —— | Triennial | Cross. | Institutions, Departments, Faculty | Characteristics of Vocational and non–Vocational Faculty. |
| FRSS/ 1988 | —— | None | Cross. | States | Allocation of Perkins Act funds, by state. Secondary & postsecondary. |



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APPENDIX C.

## NCES DATA SETS WITH VOCATIONAL INFORMATION BY LEVEL AND CATEGORY

| Category | Secondary | Postsecondary |
|---|---|---|
| Institutions | SASS | IPEDS |
| Programs, Enrollments, Completions | SASS | IPEDS |
| Teachers, Faculty, Administration | SASS<br>ATS | IPEDS<br>NSOPF |
| Students: Participation by Characteristics | 87:HSTS<br>HS&B Seniors<br>*base year 1980<br>HS&B Sophomores<br>*base year 1980<br>*follow-up 1982<br>*high school transcripts, 1982<br>NELS:88 Second Followup, 1992 (if funded)<br>*h.s. transcripts | HS&B Seniors<br>*follow-ups 1982,84,86<br>*postsecondary transcripts, 1985<br>HS&B Sophomores<br>*follow-ups 1984,86<br>*postsecondary transcripts, 1987<br>NLS:72<br>*follow-ups 1973,74,76 79,84<br>*postsecondary transcripts, 1984<br>NPSAS |
| Students: Outcomes by Characteristics | HS&B Seniors<br>*base year<br>*all follow-ups<br>HS&B Sophomores<br>*base year<br>*all follow-ups<br>*h.s. transcripts<br>NLS:72<br>*follow-ups 1973,74,76 79,84 | HS&B Seniors<br>*follow-ups 1982,84,86<br>*postsecondary transcripts, 1985<br>HS&B Sophomores<br>*follow-ups 1984,86<br>*postsecondary transcripts, 1987<br>NLS:72<br>*follow-ups 1973,74,76 79,84<br>*postsecondary transcripts, 1984<br>NPSAS |
| Students with Special Needs | 87:HSTS | — |
| Allocating Perkins Funds | FRSS | FRSS |

APPENDIX D.

## PUBLICATIONS CONCERNING VOCED BY NCES DATA SET: CURRENT AND POTENTIAL

(Entries in Column 2 are keyed to publications, Appendix E)

| | DATA SET | NCES PUBS | POTENTIAL FOR ANALYSIS | NCES CONTACT |
|---|---|---|---|---|
| ELSEC | HS&B | A,F,G,H,J K,L,M,P,R | Secondary and Postsecondary transcripts, Postsecondary Financial Aid. | Paula Knepper 357-6914 |
| | ATS | Q | Survey of Secondary school Voced program directors. | Ollie Moles * 357-6207 |
| | NELS:88 | Data to be collected 1992. | Secondary VocEd students entry into work or postsec education. (Area Vocational Schools, if funded). | Jeff Owings 357-6777 |
| | NLS:72 | B,C,D,E,I, N | Secondary and Postsecondary transcripts. Secondary & Postsecondary vocational & nonvocational student comparisons. | Paula Knepper 357-6914 |
| | SASS | Data tapes available Spr, 1989. | Comparisons of vocational and non-vocational teachers | Mary Papageorgiou 357-6328 |
| POSTSEC | BPS | Survey begins 1992. | Will have beginning first-time postsecondary students in vocational areas. | Paula Knepper 357-6914 |
| | IPEDS | Q | Postsecondary occupationally specific enrollment. | Judy Carpenter 357-6382 |
| | NPSAS | T | Analysis of identified vocational students' financial aid, persistence. | Jerry Malitz 357-6384 |
| | NSOPF | Data tapes available: Fac - 6/89 | Characteristics of vocational and non-vocational faculty. | Joanell Porter 357-6595 |
| OTHER | FRSS | 8 | Alternate analyses of administrative data. | Fay Nash 357-6754 |

NOTE: Various Department of Education Agencies and contractors have produced publications and analyses using these data sets. A sampling of these is included in Appendix F. NCES contacts can provide further details.

*Office of Research, Office of Educational Research and Improvement.



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APPENDIX E:

RECENT PUBLICATIONS
CONTAINING VOCATIONAL EDUCATION INFORMATION

National Center for Education Statistics: Tabulation Reports

A. Courses Taken in High School by Students in Different High School Programs. (December, 1988)
B. Credits Earned by Field of Study and Level of Attainment for Postsecondary Vocational Students who were High School Graduates in 1972. (April, 1988)
C. Credits Earned by Year and Level of Attainment for Postsecondary Vocational Students who were High School Graduates in 1972. (April, 1988)
D. Enrollment and Aid Status of Postsecondary Vocational Students who were High School Graduates in 1972. (April, 1988)
E. Entry and Persistence of Postsecondary Vocational Students who were High School Graduates in 1972. (April, 1988)
F. Field of Entry, Timing, and Completion for Postsecondary Vocational Students who were High School Graduates in 1972. (April, 1988)
G. High School and Beyond Tabulation: Vocational Education Credits Earned by 1980 High School Sophomores Who Graduated in 1982. (July, 1984)
H. Highest Education Degree Attained by 1972 High School Seniors by Sex, Race, Type of High School, and Type of Community, as of Spring 1979. (September, 1988)
I. Highest Educational Degree Attained by 1972 High School Seniors by Sex, Race, Type of High School, and Type of Community, as of Spring 1986. (September, 1988)
J. Highest Educational Degree Attained by 1980 High School Seniors, by Sex, Race, Type of Community, and Type of High School, as of Spring 1984. (September, 1988)
K. Highest Educational Degree Attained by 1980 High School Seniors by Sex, Race, Type of Community, and Type of High School, as of Spring 1986. (May, 1988)
L. Highest Educational Degree Attained by 1982 High School Seniors by Sex, Race, Type of Community, and Type of High School, as of Spring 1986. (September, 1988)
M. Highest Educational Degree Attained by 1980 High School Sophomores, by Sex, Race, Type of Community, and Type of High School, as of Spring 1986. (Dec, 1987)
N. Profile of 1972 High School Graduates who were Vocational Students at the Postsecondary Level. (March, 1988)

National Center for Education Statistics: Descriptive Reports

O. Directory of Less-Than-2-Year Postsecondary Schools, Volume 2, 1987-1988. (November, 1988)
P. Patterns of Participation in Secondary Vocational Education—1978-1982. NCES Bulletin. (August, 1984).
Q. Secondary Vocation Education and Nonvocational Education Teachers (*in review*).

APPENDIX E (CONTINUTED, PG. 1):

National Center for Education Statistics: Analytical Reports

R. Postsecondary Institutions Offering Vocational/Technical Programs: Analysis Findings from High School and Beyond (1980–1986). (September, 1988)
S. State Policies Concerning Vocational Education. (November, 1988)
T. Undergraduate Financing of Postsecondary Education: A Report of the 1987 NPSAS. (May, 1988)

National Center for Education Statistics: Publications Expected in 1989.

U. Characteristics of the Teaching Force
V. Enrollment, Completions, Attrition ... of 1972 and 1980 High School Graduates Entering Two-Year Institutions.
W. Faculty in Higher Education: A Descriptive Report from the 1987–88 National Survey of Postsecondary Faculty (NSOPF)
X. Fall 1987 Enrollment in Occupationally Specific Programs.
Y. Institutional Policies and Practices Regarding Faculty in Higher Education.
Z. Profile of American Postsecondary Education Institutions.
AA. Profile of Less-Than-2-Year Postsecondary Institutions, 1986–87.
AB. Teacher Demand and Shortage (Tabulation)
AC. Trends in Federal Funds for Education (1989).
AD. The Handicapped in Postsecondary Education (4-Year, 2-Year and Less-Than-2-Year Institutions). (March, 1989)
AE. Postsecondary Vocational Education of 1980 High School Seniors: The Two-Year Associate of Arts Degree. (March, 1989)

A Sampling of non-NCES Publications using NCES Data Sets: Current

Baley, I.E. Assessing the Vocational-Educational Decision-Making Patterns of Low SES Black Male High School Seniors: A Test of Two Models (Maturity, Psychology, Minorities). Ph.D. Thesis. Berkeley: University of California, 1984. (HS&B)

Bourjaily, A.K. The Relationships Among Self-Concept, Achievement, and Occupational Aspirations of High School Senior Students. Ph.D. Thesis. Akron, Ohio. University of Akron, 1984. (HS&B)

Eagle, E. & Maw, C. "Determinants of Postsecondary Educational Attainment for 1980 High School Seniors". Paper prepared for the American Statistical Association, New Orleans, August, 1988. (HS&B)

Etzioni, A. Self-Discipline, Schools, and the Business Community. Washington, D.C.: Chamber of Commerce of the U.S., 1984. (HS&B)

First Interim Report from the National Assessment of Vocational Education. Department of Education. January, 1988. (HS&B transcripts)

Hoachlander, E.G. Patterns of Participation in Secondary Vocational Education. Paper prepared for the annual meeting of American Vocational Association. St. Louis, December, 1988. (NELS:72; HS&B)

——. California's High Schools: Preparing for 2010. Paper prepared for the California Economic Development Corporation, January, 1988. (NELS:72; HS&B)

——. "The Federal Role in Vocational Education". Paper prepared for the National Assessment of Vocational Education, U.S. Department of Education. September, 1988. (NELS:72; HS&B)

Hoachlander, E.G. & Choy, S.P. "Rethinking the Delivery of Vocational Education in Secondary Schools". Technology, The Economy, and Vocational Education (Southern Growth Policies Board). Novermber, 1988. (NELS:72; HS&B)

Hoachlander, E.G., Brown, C.L., & Tuma, J. Measuring High School Curricular Experiences: Implications for Vocational Education. A report prepared for the National Assessment of Vocation Assessment, Office of Planning, Budget, and Evaluation, U.S. Department of Education, December 1987. (NELS:72; HS&B)

Horn, Laura. High School and Beyond, National Longitudinal Study 1972: Enrollment, Completion, Attrition, and Vocational Course-taking Patterns in Postsecondary Education: A Summary Comparison of 1972 and 1980 High School Graduates Entering Two-year Institutions. MPR Assoc., Aug, 1988.

Hotchkiss, L., Kang, S., & Bishop, J. High School Preparation for Employment. Columbus, Ohio: Nat. Center for Res. in Voc. Ed., 1984. (HS&B)

Kaufman, P. "High School Dropouts Who Return to School". Ph.D. thesis. Claremont: Claremont Graduate School, 1988. (NELS:72; HS&B)

MPR Associates. High School and Beyond Tabulation: Classifications of Secondary Vocational Education Courses and Students, Part 1. Feb, 1988.

——. High School and Beyond Tabulation: Classifications of Secondary Vocational Education Courses and Students, Part 2. Oct, 1988.

——. High School and Beyond Tabulation. Postsecondary Credits of 1980 Seniors Completing Vocational Education Associate Degrees or Certificates. Apr, 1987.

——. National Longitudinal Study of the High School Class of 1972. The Postsecondary Education of 1972 Seniors Completing Postsecondary Vocational Programs. Jun, 1987 (Revised, Oct, 1987).

APPENDIX E (CONTINUED, PG. 3):

Second Interim Report from the National Assessment of Vocational Education. Department of Education. September, 1988. (HS&B;NLS:72;FRSS)

Vocational Education and Special Populations: Final Report. Prepared for NCES under contract 300–86–0018 by TEM Associates and MPR Associates. Jan, 1987.

A Sampling of non–NCES Publications using NCES Data Sets: Projected

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1990 Congressional Report on Implementation of Handicapped Act, Office of Special Education and Rehabilitative Services. (NAEP transcripts)

Final Report from the National Assessment of Vocational Education.

Westat, Inc.. Using the 87:HSTS
(A). Tabulations and Analyses Focused on VocEd Courses and Students.
(B). Patterns of Course Taking and Other Analyses for All Students, with comparative breakouts for Vocational and Non–Vocational.